macules showed the minute bluish, white center as seen in Koplik spots. Occasionally a moderate diarrhea was noted in the earlier stages of the reaction. No symptoms of rhinitis and bronchitis were encountered. The skin and lesions, as shown by microscopic examination after fixation in Zenker's fluid and staining with alum hematoxylin and eosin, corresponded very closely to those described in cases of human measles by Ewing and by Mallory and Medlar. The lesions of the skin occurred both in the corium and epidermis, those in the latter being less numerous and conspicuous than in the former, where they were definite and typical. In the corium, they consisted of swelling and proliferation of the endothelial cells lining the capillaries and smaller veins, accumulation of endothelial leukocytes about the capillaries and active multiplication of these emigrated leukocytes. In addition there is a moderate exudation of serum into the pericapillary tissues, where in the earlier lesions, a very few eosinophils, polymorphonuclear leukocytes and lymphocytes might be present. No diapedesis of erythrocytes could be made out. The endothelial cells of the capillary walls appeared swollen and their cytoplasm was finely granular. Occasionally one was seen in mitosis. The emigrated endothelial leukocytes were young and active. Their nuclei were frequently lobulated and in the early cases these leukocytes were in active mitosis. In the epidermis in early cases, there were minute foci of serous exudate leading to swelling and vacuolation of the epithelial cells of the Malpighian layer. The serum sometimes accumulated under the cornified layer, producing tiny vesicles. There was a slight infiltration of these foci with endothelial leukocytes. The lesions in the labial mucous membrane were essentially the same as those occurring in the skin. Invasion of the epithelium was more marked than in the case of the epidermis. The lesions in the mucous membrane of the tongue were identical with those in the labial mucosa.

HYGIENE AND PUBLIC HEALTH

UNDER THE CHARGE OF

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Acute Respiratory Infection in Man Following Inoculations with Virulent Bacillus Influenzæ.—CECIL and STEFFEN (*Jour. Infect. Dis.*, 1921, xxviii, 201) state that virulent influenza bacilli, when injected into the nose and throat of healthy volunteers, may excite in them an acute respiratory disease similar in many respects to influenza but falling short of the typical clinical picture. In such cases influenza bacilli, biologically identical with those inoculated, may be recovered

from the discharges as long as symptoms persist and often for some time thereafter. Filtrates of Bacillus influenzæ cultures when similarly injected into two healthy volunteers produced neither local nor constitutional reaction. The inoculation of healthy volunteers with virulent hemolytic streptococci may in some cases induce an acute follicular tonsillitis with fever and leukocytosis. A virulent pneumococcus Type IV, on the other hand, was injected into the nose and throat of two healthy volunteers with impunity.

Botulism in Cattle.—GRAHAM and SCHWARZE (*Jour. Bacteriol.*, 1921, vi, 69) isolated an anaërobic bacillus biologically resembling Bacillus botulinus (Type B) from a corn silage. Several cattle of the herd consuming the silage developed symptoms of forage poisoning on two different occasions and four animals died. It is possible that botulinus toxin in the ensilage was primarily related to the disease in question. The silage was regarded as unsafe for cattle, and after discontinuing its use in the daily rations the animals remained healthy. Botulinus antitoxin (Type B) proved efficacious in protecting guinea-pigs against lethal doses of toxin in unfiltered broth cultures produced by the anaërobic bacillus isolated from the corn silage. Forty-three cattle were injected with botulinus antitoxin and subsequently fed on silage. The animals remained apparently healthy. One control or untreated animal did not show visible illness and the value of the antitoxin in the feeding operations is therefore not conclusive. It is worthy of record that the treatment did not injure the animals and encouragement is offered for more extensive field trials in determining the value of the antitoxin in cattle against the ill-effects of otherwise nourishing rations containing Bacillus botulinus toxin which heretofore has advisedly been discarded. The latter item is of importance considering the increased cost of producing grain and forage.

Concerning the Antiseptic Action of Some Aromatic Fumes.—MACHT and KUNKEL (*Proc. Soc. for Exp. Biol. and Med.*, 1920, xviii, 68) state that while their experiments were of a crude character the results obtained were of so uniform a nature that they are inclined to conclude that the fumes produced by the burning or destructive dry distillation of various gums, spices and other aromatic substances of a similar nature certainly tend to exert an antiseptic action on the bacteria studied. This is, of course, of interest not only from the scientific point of view, but also to the historian as offering a possible explanation for the extensive employment of incense in connection with sacrificial rites, etc.

The Distribution of the Spores of Bacillus Botulinus in Nature.—MEYER and GEIGER (*Public Health Reports*, 1921, xxxvi, 4) regard the soil as the common source of the spores of the botulinus organism and cite examples to support this view. They consider it likely that the soil may be contaminated by manure. They regard the soil infection as prevailing in certain localities. The practical point is that food should be so sterilized in canning as to obviate danger. Cooking the canned food just before using is an added safeguard, and any canned fruits or vegetables showing the least sign of spoilage should be discarded.